



Southern Nuclear

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Docket Nos.: 50-366

NL-19-0628

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555-0001

Edwin I. Hatch Nuclear Plant Unit 2
LER 2019-003-00 Manual Reactor Scram from 25 Percent Power Due to Loss
of Condenser Vacuum

Ladies and Gentlemen:

In accordance with the requirements of 10 CFR 50.73(a)(2)(iv)(A), Southern Nuclear Operating Company hereby submits the enclosed Licensee Event Report.

This letter contains no NRC commitments. If you have any questions, please contact the Hatch Licensing Manager, Jimmy Collins at (912) 537-2342.

Respectfully submitted,

A handwritten signature in black ink, appearing to be 'T.A. Vehec', written over a horizontal line.

T.A. Vehec
Vice President – Hatch

TAV/TR

Enclosure: LER 2019-003-00

Cc: Regional Administrator, Region II
NRR Project Manager – Hatch
Senior Resident Inspector – Hatch
RTYPE: CHA02.004

**Edwin I. Hatch Nuclear Plant Unit 2
LER 2019-003-00 Manual Reactor Scram from 25 Percent Power Due to Loss
of Condenser Vacuum**

Enclosure

LER 2019-003-00



LICENSEE EVENT REPORT (LER)

(See Page 2 for required number of digits/characters for each block)

(See NUREG-1022, R 3 for instruction and guidance for completing this form
<http://www.nrc.gov/reading-m/doc-collections/nuregs/staff/sr1022/r3/>)

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Information Services Branch (T-2 F43), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001 or by e-mail to InfoCollectionResource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NE08-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. Facility Name Edwin I. Hatch Nuclear Plant Unit 2					2. Docket Number 05000 366					3. Page 1 OF 2				
4. Title Manual Reactor Scram from 25 percent Power Due to Loss of Condenser Vacuum														
5. Event Date			6. LER Number			7. Report Date			8. Other Facilities Involved					
Month	Day	Year	Year	Sequential Number	Rev No.	Month	Day	Year	Facility Name			Docket Number		
03	24	2019	2019	003	00	05	22	2019	Facility Name			Docket Number		
9. Operating Mode														
11. This Report is Submitted Pursuant to the Requirements of 10 CFR §: (Check all that apply)														
1			<input type="checkbox"/> 20.2201(b)			<input type="checkbox"/> 20.2203(a)(3)(i)			<input type="checkbox"/> 50.73(a)(2)(ii)(A)			<input type="checkbox"/> 50.73(a)(2)(viii)(A)		
			<input type="checkbox"/> 20.2201(d)			<input type="checkbox"/> 20.2203(a)(3)(ii)			<input type="checkbox"/> 50.73(a)(2)(ii)(B)			<input type="checkbox"/> 50.73(a)(2)(viii)(B)		
			<input type="checkbox"/> 20.2203(a)(1)			<input type="checkbox"/> 20.2203(a)(4)			<input type="checkbox"/> 50.73(a)(2)(iii)			<input type="checkbox"/> 50.73(a)(2)(ix)(A)		
			<input type="checkbox"/> 20.2203(a)(2)(i)			<input type="checkbox"/> 50.36(c)(1)(i)(A)			<input checked="" type="checkbox"/> 50.73(a)(2)(iv)(A)			<input type="checkbox"/> 50.73(a)(2)(x)		
10. Power Level			<input type="checkbox"/> 20.2203(a)(2)(ii)			<input type="checkbox"/> 50.36(c)(1)(ii)(A)			<input type="checkbox"/> 50.73(a)(2)(v)(A)			<input type="checkbox"/> 73.71(a)(4)		
025			<input type="checkbox"/> 20.2203(a)(2)(iii)			<input type="checkbox"/> 50.36(c)(2)			<input type="checkbox"/> 50.73(a)(2)(v)(B)			<input type="checkbox"/> 73.71(a)(5)		
			<input type="checkbox"/> 20.2203(a)(2)(iv)			<input type="checkbox"/> 50.46(a)(3)(i)			<input type="checkbox"/> 50.73(a)(2)(v)(C)			<input type="checkbox"/> 73.77(a)(1)		
			<input type="checkbox"/> 20.2203(a)(2)(v)			<input type="checkbox"/> 50.73(a)(2)(i)(A)			<input type="checkbox"/> 50.73(a)(2)(v)(D)			<input type="checkbox"/> 73.77(a)(2)(i)		
			<input type="checkbox"/> 20.2203(a)(2)(vi)			<input type="checkbox"/> 50.73(a)(2)(i)(B)			<input type="checkbox"/> 50.73(a)(2)(vii)			<input type="checkbox"/> 73.77(a)(2)(ii)		
			<input type="checkbox"/> 50.73(a)(2)(i)(C)			<input type="checkbox"/> Other (Specify in Abstract below or in NRC Form 366A)								
12. Licensee Contact for this LER														
Licensee Contact Hatch Nuclear Plant Licensing Manager/Jimmy Collins										Telephone Number (Include Area Code) 912-537-2342				
13. Complete One Line for each Component Failure Described in this Report														
Cause E	System EA	Component RLY	Manufacturer G080	Reportable to ICES Y										
14. Supplemental Report Expected					15. Expected Submission Date					Month	Day	Year		
<input type="checkbox"/> Yes (If yes complete 15 Expected Submission Date)					<input checked="" type="checkbox"/> No									
<p>Abstract (Limit to 1400 spaces, i.e., approximately 14 single-spaced typewritten lines)</p> <p>On March 24, 2019 at 0026, with Unit 2 in Mode 1 and ascending in power, Control Room Operators noticed the Main Condenser was losing vacuum and initiated a power reduction. Due to vacuum continuing to degrade, Operators lowered reactor power down to 25 percent and initiated a manual reactor SCRAM at 0159. Following the trip of the Main Turbine, the non-safety Station Service 4160V buses failed to fast bus transfer from normal to the alternate power supply resulting in the loss of all non-safety loads. Operators entered an abnormal operating procedure for the Loss of 4160V buses to manually re-energize the Station Service buses. The de-energized Station Service buses resulted in a loss of the Condensate Feedwater system. Reactor water level was then maintained by the Reactor Core Isolation Cooling system while pressure was controlled by High Pressure Coolant Injection. A primary containment isolation signal was received on low reactor water level. The event is reportable pursuant to 10 CFR 50.73(a)(2)(iv)(A) for a manual reactor SCRAM and general containment isolation signal.</p> <p>Corrective actions were taken to properly align the Steam Jet Air Ejector system, which was the cause of the loss of condenser vacuum, and to replace the failed relay, which caused the failure of the Station Service buses to transfer.</p>														

**LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET**

(See NUREG-1022, R 3 for instruction and guidance for completing this form
http://www.nrc.gov/reading_rm/doc-collections/nuregs/staff/sr1022/r3/)

Estimated burden per response to comply with this mandatory collection request 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Information Services Branch (T-2 F43), U. S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to infodirects.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Edwin I. Hatch Nuclear Plant Unit 2	05000-	2019	003	00

NARRATIVE**Event Description**

On March 24, 2019 at 0026, with Unit 2 in Mode 1 and ascending in power, Control Room Operators noticed the Main Condenser was losing vacuum and initiated a power reduction. Due to vacuum continuing to degrade, Operators lowered reactor power down to 25 percent and initiated a manual reactor SCRAM at 0159. Following the trip of the Main Turbine, the non-safety Station Service 4160V buses failed to fast bus transfer from normal to the alternate power supply resulting in the loss of all non-safety loads. Operators entered an abnormal operating procedure for loss of the 4160V power to manually re-energize the Station Service buses. The de-energized Station Service buses resulted in a loss of the Condensate Feedwater system. Reactor water level and pressure was maintained during the event by the Reactor Core Isolation Cooling (RCIC) [EIS BN] and High Pressure Coolant Injection (HPCI) [EIS BJ] systems, respectively. In addition, Operators received a valid primary containment isolation signal for low level reactor water during the event.

Event Cause Analysis

Subsequent investigation after the event determined that the degrading Main Condenser vacuum was the result of a throttled valve supplying condensate flow to the 2B Steam Jet Air Ejector (SJAE) [EIS SH]. In August 2017, the valve was throttled to support more condensate flow. It did not get returned to the open position when the SJAE was shut down during the outage. Through the investigation, it was found that the local closed indication light bulb had blown, giving the System Operator a false indication that the valve was in the open position.

The loss of Station Service buses was caused by the failure of the relay (GE model CR 120 series relay) designed to actuate when the Main Generator output breakers open in order to automatically transfer Station Service buses from normal power to their alternate supply. After replacing the relay, the site determined that the faulty relay was original to the plant and had never been assigned a maintenance strategy. The relay failure was ultimately attributed to the age of the component.

Safety Assessment

While the failure of the Station Service buses to fast transfer resulted in the loss of the Condensate and Feedwater System, all safety systems functioned as designed and reactor water level and pressure control were established via the RCIC and HPCI systems respectively, and in accordance with approved plant procedures. This resulted in the event having low safety consequence.

Corrective Actions

Corrective actions included; correcting the throttled valve position, replacing the faulty indicating bulb, and revising procedures. Additionally, corrective actions for the failure of the Station Service buses to fast transfer included; developing a maintenance strategy for the relay that caused the condition; as well as, developing functional testing for these and other critical control relays.

Similar Events

None